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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,243	03/14/2001	Reiji Misawa	35.C15210	1308

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EXAMINER	
THOMPSON, JAMES A	
ART UNIT	PAPER NUMBER
2625	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/805,243	MISAWA, REIJI	
	Examiner	Art Unit	
	James A. Thompson	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,17,18,20 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 30 January 2007 have been fully considered but they are not persuasive. Hayashi (USPN 5,754,684) does actually teach a smoothing process. Firstly, figure 7; column 13, lines 23-33; and column 14, lines 25-38 of Hayashi show the gradation correction process for each point (G_i) and increment (ΔX_i) along the input-output gradation ranges. The smoothing takes place wherein the straight lines formed for each increment in the input-output curve are smoothed into a better representative curve, such as shown in figures 11 and 12; and in column 15, lines 43-56 of Hayashi. Furthermore, even if *arguendo* the smoothing process taught by Hayashi were not to be considered a smoothing process, Nakamura (USPN 5,889,928) is relied upon initially to teach a smoothing process (figure 7(S86) and column 13, lines 41-44 of Nakamura). Hayashi would simply provide a teaching that one of ordinary skill in the art at the time of the invention would use to modify the smoothing process already taught by the combination of Nakamura in view of Murayama (USPN 5,978,506). Specifically, Hayashi would teach that a correction table uses some pieces of data whose number changes depending on the position of data in the generated train of data; and that said number of pieces of data is selected on the basis of density reproduction characteristics of said image forming apparatus. Thus, the combination of Nakamura in view of Murayama and Hayashi teaches that the smoothing process which is performed to create said correction table uses some pieces of data whose number changes depending on the position of data in the generated train of data; and that the number of pieces of data in the smoothing process is selected on the basis of density reproduction characteristics of said image forming apparatus, as recited in claim 1.

The present amendments to claims 1, 17 and 20, which incorporate limitations from now canceled claims 3, 19 and 22, respectively, have been fully considered and are addressed in the prior art rejections below. Any new grounds of rejection have been necessitated by the present amendments to the claims.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject

matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1-3 and 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura (USPN 5,889,928) in view of Murayama (USPN 5,978,506) and Hayashi (USPN 5,754,683).**

Regarding claims 1, 17 and 20: Nakamura discloses an image forming apparatus (figure 2 of Nakamura) comprising reading means (figure 2(1) of Nakamura) for reading an image and generating image data (column 8, lines 12-15 of Nakamura); creation means (figure 2(70) of Nakamura) for creating a correction table for correcting the density characteristics of the image data (figure 3; column 8, lines 66-67 and column 9, lines 3-6 of Nakamura); correction means (figure 2(64) of Nakamura) for correcting the density characteristics of the image data from said reading means (column 9, lines 18-22 of Nakamura), based on the correction table created by said creation means (figure 4(S1-S3) and column 9, lines 41-44 of Nakamura); and output means (figure 1(2) of Nakamura) for outputting an image based on the image data corrected by said correction means (column 9, lines 18-22 of Nakamura), wherein said creation means determines the train of density data (figure 5a and column 9, lines 65-67 of Nakamura) based on an average value of the plural brightness data obtained by said reading means by reading gradient patterns (column 10, lines 1-5 of Nakamura) and applies a smoothing process to the train of data (column 10, line 66 to column 11, line 2 of Nakamura), thereby to create the correction table (column 11, lines 2-3 of Nakamura). Alleviating a sudden change in gradation or a gradation jump (figure 7(S86) and column 13, lines 41-44 of Nakamura) is one type of smoothing operation. Basing said smoothing on a range of smoothing is inherent since a sudden change in gradation or a gradation jump cannot be detected with a single data point. A certain range of data points is required to detect a sudden change or jump. Further, the input image data can be considered a "train" of data since said data is read in sequentially in a scanner.

Nakamura does not disclose expressly that said reading means reads plural gradient patterns, wherein said plural gradient patterns are disposed in point symmetry with respect to a center position of the image; that the smoothing process which is performed to create the correction table uses some pieces of data whose number changes depending on the position of data in the determined train of density data; and that the number of pieces of data used in the smoothing process is set on the basis of density reproduction characteristics of said image forming apparatus.

Murayama discloses reading plural gradient patterns (figure 11 and column 9, lines 12-18 of Murayama), wherein said plural gradient patterns are disposed in point symmetry with respect to a center

position of the image (figure 11 and column 9, lines 15-18 of Murayama). As can clearly be seen in figure 11 of Murayama, the four gradation patterns (figure 11(310,320,330,340) of Murayama) are arranged in point symmetry with respect to the center position of the image (figure 11(300) of Murayama).

Nakamura and Murayama are combinable because they are from the same field of endeavor, namely color and gradation correction in image processing and reproduction systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use multiple gradient patterns arranged symmetrically about the center of the image, as taught by Murayama. The motivation for doing so would have been to be able to correct the color and gradation for multiple sets of dithering patterns (column 9, lines 1-7 of Murayama), thus providing a broader and more complete correction process. Therefore, it would have been obvious to combine Murayama with Nakamura.

Nakamura in view of Murayama does not disclose expressly that the smoothing process which is performed to create said correction table uses some pieces of data whose number changes depending on the position of data in the determined train of density data; and that the number of pieces of data used in the smoothing process is set on the basis of density reproduction characteristics of said image forming apparatus.

Hayashi discloses that the smoothing process (figures 11 and 12; and column 15, lines 43-56 of Hayashi) uses some pieces of data (column 13, lines 23-33 of Hayashi) whose number changes depending on the position of data in the determined train of density data (figures 3 and 14; column 11, lines 34-44; and column 14, lines 49-61 of Hayashi); and that that number of pieces of data in the smoothing process is selected on the basis of density reproduction characteristics of the image forming apparatus (figures 7 and 14; column 14, lines 49-61; and column 17, lines 10-15 of Hayashi). A test pattern (figure 3 of Hayashi) is output and the scanned in to correct the gradation patterns (column 11, lines 34-44 of Hayashi). The gradation smoothing (figures 11 and 12; and column 15, lines 43-56 of Hayashi) for each test patch area is performed based on these gradation corrections (figure 7; column 13, lines 23-33; and column 14, lines 25-38 of Hayashi). The portion of the reproduction curve (figure 14(R1,R2,R3) of Hayashi) to be selected, and thus the number of points used, is based on the density region of the curve (figure 14(R1,R2,R3) of Hayashi) which corresponds to the density characteristics of the particular patch (column 11, lines 34-44 and column 17, lines 10-15 of Hayashi). Further, the gradation characteristics are based on the density reproduction characteristics of the image forming device (column 13, lines 23-33 of Hayashi) which are position dependent (figure 3 and column 11, lines 34-44 of Hayashi). Thus, the

number of pieces of data is selected based on the position of data in the generated train of data and the density reproduction characteristics of the image forming apparatus.

Nakamura in view of Murayama is combinable with Hayashi because they are from the same field of endeavor, namely the smoothing and correction of digital image data in a digital image data reproduction system. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the density reproduction characteristic and position region dependencies taught by Hayashi in the determination of the number of pieces of density data used in the smoothing process. The motivation for doing so would have been that fine adjustments of the smoothing process can occur after coarse adjustments of the smoothing process (column 13, line 66 to column 14, line 3 of Hayashi), thus resulting in faster operation of the image processing device (column 2, lines 17-38 of Hayashi). Therefore, it would have been obvious to combine Hayashi with Nakamura in view of Murayama to obtain the invention as specified in claims 1, 17 and 20.

Regarding claims 2, 18 and 21: Nakamura discloses that the gradient pattern (figure 3 of Nakamura) is composed of a plurality of density patches (figure 3(TP1-TP16); column 8, lines 66-67 and column 9, lines 3-6 of Nakamura).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James A. Thompson
Examiner
Technology Division 2625

JAT
05 April 2007

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